Historic, archived document

Do not assume content reflects current
scientific knowledge, policies, or practices.

USDA, AGRL RESEARCH SERVICE
ENTOMOLOGY RESEARCH BR.
FRUIT INSECT INVESTIGATIONS
7-23-54 PLANT INDUSTRY STATION
IPS BELTSVILLE, MD.

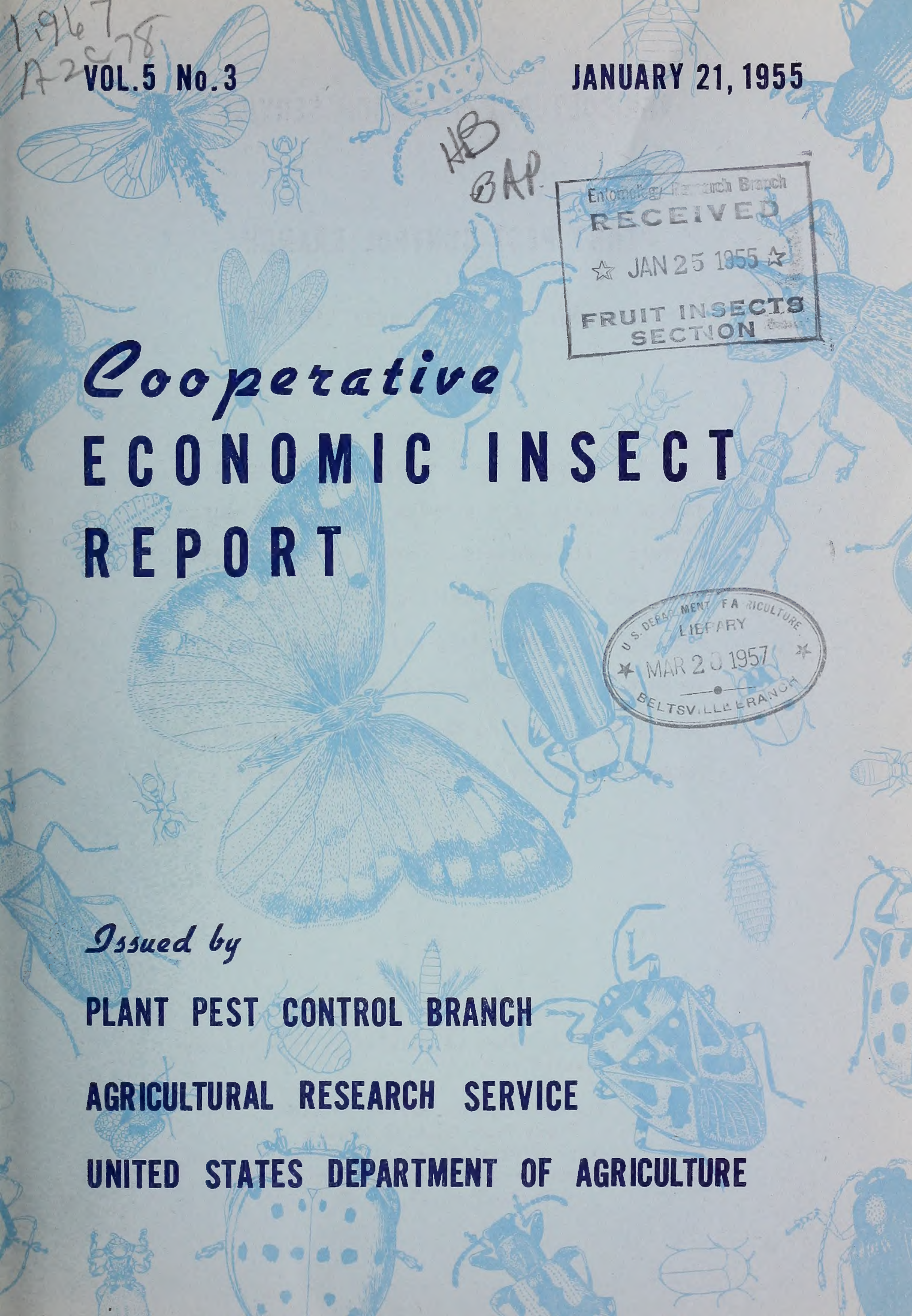
1.967
A2C78

VOL.5 No.3

JANUARY 21, 1955

HB
BAP

Entomology Research Branch
RECEIVED
☆ JAN 25 1955 ☆
FRUIT INSECTS
SECTION



Cooperative
ECONOMIC INSECT REPORT

U.S. DEPARTMENT OF AGRICULTURE
LIBRARY
★ MAR 20 1957 ★
BELTSVILLE BRANCH

Issued by

PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Economic Insect Survey Section
Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 5 January 21, 1955 No. 3

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

BOLL WEEVIL hibernation counts in North Carolina. (page 46).

STORED GRAIN INSECT survey in Washington. (page 48).

FOREST INSECT survey procedures in Maine. (page 50).

Summary of INSECT CONDITIONS - 1954 - Arkansas. (page 52).

BEET LEAFHOPPER conditions in southern Idaho and eastern Oregon - 1954. (page 57).

* *

Reports in this issue are for the week ending January 14, 1955, unless otherwise designated.

WEATHER BUREAU'S 30-DAY OUTLOOK
*Mid-January to Mid-February 1955

The Weather Bureau"s 30-day outlook for the period from mid-January to mid-February calls for temperatures to average below seasonal normals over most of the nation except for near normal along the northern and southern borders. Thus the cold snap of the past few days appears to mark the beginning of a more wintry regime over the eastern two-thirds of the nation. Precipitation is expected to exceed normal over the southern border states and along the Atlantic Seaboard with more snow than normal north of Hatteras. Below normal amounts are expected over the Plains, mid-West, and Pacific Northwest. In other areas near normal precipitation is anticipated.

*This report released by the Weather Bureau on January 14, 1955.

Weather forecast given here is based on the official 30-day "Resume and outlook, "published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington, D. C. Price: $4. 80 a year, $2. 40 for six months.

WEATHER FOR THE WEEK ENDING JANUARY 17, 1955

Temperatures for the week averaged above normal in the Great Plains and in northern regions from the Great Lakes to the North Pacific Coast, but below normal in the central Great Basin and far Southwest, and in the East and South. Precipitation was moderate to heavy along the Pacific Coast, in parts of New Mexico and Arizona, and in most of the South and Southeast, but was generally light elsewhere with parts of the central Great Plains receiving none at all. In the North Central Interior the winter has been unusually mild thus far. Subzero temperatures were recorded in the Minneapolis, Minn. area for the first time this winter on the 16th, the latest date on record there for the first occurrence of subzero minima. The mild weather resulted in continued delay of the ice harvest in northern Minnesota. Freezing occurred in north and central Florida on the 12th, 14th, and 15th, with minima of 36° to 40° and frost occurring as far south as the Everglades. The strawberry crop suffered heavy losses, and other tender crops such as peppers and tomatoes were damaged to some extent. Freezing also occurred in California's Central Valley and as far south as the Los Angeles area on the 12th, but no serious damage was reported. Fort Valley, Ariz., recorded -20° on this date.

From eastern Texas and southeastern Oklahoma to the Atlantic Coast, rains which fell at the beginning and near the close of the period and totaled from 1 to over 2 inches in most of this area and up to 5 inches in

(Weather continued on page 49)

CEREAL AND FORAGE INSECTS

A WINTER GRAIN MITE (*Penthaleus major*)- TEXAS - Light widespread infestation on small grains in Grayson County. Damage not too apparent following recent rains. (Chada).

CORN LEAF APHID (*Rhopalosiphum maidis*) - TEXAS - Light widespread infestation on barley in Fannin and Denton Counties. Not of economic importance at present but could develop in the spring. (Chada).

PEA APHID (*Macrosiphum pisi*) - CALIFORNIA - Severe damage to a 60-acre alfalfa field in Los Angeles County. Control used. General infestations in Orange County but medium damage occurred only locally. (Coop. Ins. Pest Rpt., Dec.).

APHIDS - TEXAS - Medium to heavy widespread infestation on alfalfa in Wharton County. Alfalfa near the cutting stage. (Garner).

Light Trap Collections:
ARKANSAS - A total of 17 armyworm (*Pseudaletia unipuncta*) adults and 18 black cutworm (*Agrotis ypsilon*) adults were collected in light trap,operated December 31 to January 5, at the Rice Branch Station (Stuttgart). (Warren).

ARMYWORM (*Pseudaletia unipuncta*) - FLORIDA - Larvae infesting a 1400-acre pangola grass pasture and a 50-acre pasture of several grasses near Davie. No counts were made. (Link, Dec. 10).

WHITE-FRINGED BEETLE - NEW JERSEY - Concerning the new infestation in Cumberland County, delimiting larval survey shows additional infestation only in fields adjacent to the original infested area. (White-fringed Beetle Cont. Proj.).

LUPINE MAGGOT (*Hylemya lupini*) - FLORIDA - Larvae damaging as high as 80 percent of lupine plants in some fields at Quincy. Extent of infestation varies in different fields. (May).

FRUIT INSECTS

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - The first adult of the 1954-1955 harvesting season was captured northeast of Weslaco in the Rio Grande Valley area, in a trap on December 7 which is approximately one month earlier than last year when the first specimen was trapped on January 5. During the period of December 16 and 31, 1200 traps inspected but no Mexican fruit flies were found and a total of 220 groves inspected but no larval infestations discovered. MEXICO - No additional fruit flies were trapped in Baja California or Sonora during December. (Mex. Fruitfly and Cit. Blackfly Cont. Proj.).

YELLOW SCALE (Aonidiella citrina) - CALIFORNIA - Infestation in Butte County citrus ranging from trace to heavy. Infestations general over Tulare County citrus orchards. (Coop. Ins. Pest Rpt., Dec.).

OBSCURE SCALE (Chrysomphalus obscurus) - TEXAS - Heavy local infestation on pecan trees in Brazos County. (King).

SPIDER MITES - UTAH - Unusually heavy population of mites and eggs on apple trees. (Tibbetts, Knowlton).

CITRUS RED MITE (Metatetranychus citri) FLORIDA - In all stages infesting citrus and various ornamentals at Gainesville. Population sufficient in residential planting to require control. (Hetrick). CALIFORNIA - Infestations occurred on citrus in Orange, San Diego, Santa Barbara and Butte Counties. A heavy infestation on 100 acres of lemons reported in San Diego County and control measures necessary. (Coop. Ins. Pest Rept., Dec.).

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Medium infestations in deciduous fruit orchards in Tulare County. Medium to heavy infestations general in deciduous fruit trees in Butte County. Control necessary in both counties. (Coop. Ins. Pest Rept., Dec.).

BLACK SCALE (Saissetia oleae) - CALIFORNIA - Infestations ranging from medium to very heavy in 1,500 of 5,000 acres of olives in Butte County. Medium local infestations in olive orchards in Tulare County. Control used. (Coop. Ins. Pest Rpt., Dec.).

NUT INSECT PESTS - CALIFORNIA - Filbertworm (Melissopus latiferreanus), navel orangeworm (Myelois venipars) and codling moth (Carpocapsa pomonella): Excessive damage to walnuts during harvest, over the Sacramento Valley and bordering foothills. Damage ranged upward to 40 percent in some orchards. The filbertworm was the most prevalent with the codling moth rated a low third, except that codling moth may have left the nuts previous to harvest and examination. (Coop. Ins. Pest Rpt., Dec.).

A LEAF ROLLER (Platynota stultana) - CALIFORNIA - Severe loss of Valencia oranges in Los Angeles County. This is the first time for heavy infestation of these oranges in the county. (Coop. Ins. Pest Rpt., Dec.).

TRUCK CROP INSECTS

BEET LEAFHOPPER (Circulifer tenellus) - TEXAS - Medium widespread infestation on spinach in Winter Garden area. Numbers have been reduced probably due to damp, cool weather. Two to 3 per 100 sweeps found. Spinach virus very severe. (Richardson).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - TEXAS - Medium to heavy local infestation on turnip greens in Brazos County. (Davis).

ROOT APHIDS - CALIFORNIA - Medium infestations on 500 acres of lettuce and 1,000 acres of broccoli. Control necessary. (Coop. Ins. Rpt., Dec.).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - TEXAS - Light local infestation on carrots in Dimmit County. The first specimen for this season was found in sweeps, January 9. Three were found in 100 sweeps, January 11. (Richardson).

THRIPS - CALIFORNIA - Severe infestations on truck crops in Tulare County. Control applied. (Coop. Ins. Pest Rept., Dec.).

TOMATO PINWORM (*Keiferia lycopersicella*) - CALIFORNIA - The heaviest infestation on tomatoes in many years developed in Los Angeles County at the close of harvest. This pest has not been a problem for about 10 years. (Coop. Ins. Pest Rpt., Dec.).

COTTON INSECTS

Boll Weevil Hibernation Survey - 1954 - North Carolina:

During the period November 23 to December 27, surface woods trash examinations for hibernating boll weevils were made on 5 farms each in 9 counties in North Carolina. A total of 450 square yeards of surface trash was examined. The average number of boll weevils found per acre per county was as follows: Sampson - 2904; Cleveland - 290; Rowan - 1549; Halifax - 2614; Scotland - 968; Hoke - 484; Franklin - 1065; Wilson - 2130; and Harnett - none. The average number per acre for all of the samples taken in North Carolina was 1334.

Other economic insects found during these examinations include bean leaf beetle, Fuller rose beetle, Mexican bean beetle, lady beetles, and lesser clover leaf weevil. (Cotton Ins. Sec. & N. C. Dept. of Ent.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

BARK BEETLES (*Ips* sp.) - ARKANSAS - Continue to be active in pine forests of coastal plains during periods of warm weather. Infestations built up in areas burned over late in the summer and fall and in trees weakened by drought. Danger spots should be noted and watched closely. (Warren).

A PINE BEETLE (*Dendroctonus* sp.) - VIRGINIA - Heavily damaging 15-acre pine plantation in Halifax County. Extensive damage also to 5 acres of red pines. (Lyon, January 6.).

JUNIPER WEBWORM (Dichomeris marginella) - VIRGINIA - Heavy damage to Irish juniper in local area of Augusta County. (Woodside, January 5).

INSECTS AFFECTING MAN AND ANIMALS

CLEAR LAKE GNAT (Chaoborus astictopus) - CALIFORNIA - During the fall Clear Lake,in Lake County, was treated for the second time for this insect. The first time was five years ago. Control gave 95 percent reduction of gnat larvae. (Coop. Ins. Pest Rpt., Dec.).

A TICK (Otobius lagophilus) - CALIFORNIA - During the year this species was collected in Kern County. It was known to be only in San Bernardino and San Joaquin Counties. (Coop. Ins. Pest Rpt., Dec.).

TROPICAL RAT MITE (Bdellonyssus bacoti) - FLORIDA - Troublesome in a garage apartment in Gainesville. (Hetrick).

MOSQUITOES - CALIFORNIA - Initial collections in Santa Clara County were made during the season of the following: Aedes nigromaculis, Culiseta maccrackenae, Culex boharti and Culex erythrothorax. (Coop. Ins. Pest Rpt., Dec.).

CATTLE LICE - WYOMING - Infesting cattle in most counties of the State. Control used in some counties. (Poyner).

COMMON CATTLE GRUB (Hypoderma lineatum) - ARKANSAS - Larvae began to appear in backs of cattle around December 15. (Warren).

STORED-PRODUCT INSECTS

STORED-GRAIN INSECTS - MARYLAND - The following were found infesting a carton of crown bottle caps, Baltimore: Red flour beetle (Tribolium castaneum) 144 specimens; lesser grain borer (Rhyzopertha dominica) 25 specimens; and flat grain beetle (Laemophloeus pusillus) 2 specimens. (U. Md., Ent. Dept.).

VIRGINIA - Seventeen of 66 bins examined on farms in Rockingham County had light infestations. (Shipe, Peterson, Rowell, Dec. 12, 1954). CALIFORNIA - During fumigation of a warehouse, containing 32,000 tons of barley in Sacramento County, the granary weevil (Sitophilus granarius) and the saw-toothed grain beetle (Oryzaephilus surinamensis) were found to be most prevalent. (Coop. Ins. Pest Rpt., Dec.).

Stored Grain Insect Survey in Washington - 1954:
A survey of stored-grain insects in 200 bins at 51 stations was conducted in the wheat-growing areas, December 20-31. RED FLOUR BEETLE (Tribolium castaneum) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) were the most common pests again this year. A few other species were found. Insects were not abundant in most elevators, but several had heavy populations. The average moisture content of surface samples in 1953 was about 11 percent, in 1954 about 10 percent. Increased numbers of insects are expected in the next few months. (Walker, Bry).

MISCELLANEOUS INSECTS

OLD HOUSE BORER (Hylotrupes bajulus) - VIRGINIA - Damaging seasoned structural wood of homes in Pulaski and Lee Counties. (Rowell).

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Adults in house at Barclay. (U. Md., Ent. Dept.). Rather heavy in house at Silver Spring. (Sherman).

RECENT IMPORTANT INTERCEPTIONS AT PORTS OF ENTRY

Of unusual interest recently was the interception of living specimens of the jasmine whitefly, Dialeurodes kirkaldyi (Kot.), on the leaves of a gardenia plant in airplane baggage from Lebanon at New York, N. Y. (Uttal). This insect has been reported injurious to jasmine and other ornamentals. It has been intercepted a number of times in recent years at various ports on Gardenia and Jasminum sp. from China, Hawaii, Lebanon and the Philippines. It has also been intercepted on *Morinda citrifolia* from Hawaii; *Murraya paniculata* from Siam (?); *Randia tahitensis* and *Tabernaemontana* sp. from Tahiti; and on unknown plants from China, Guam, and Japan. It is also said to occur in Egypt and British Guiana. It is not known to be present in the continental United States. (Compiled - Plant Quarantine Branch).

Weather (continued)

the New Orleans area maintained adequate topsoil moisture and improved the low subsoil moisture supply. Rains along the southern California Coast were also very beneficial, particularly in the Los Angeles area where the soil was soaked for the first time this winter. Rains and snows in most of the Great Plains were too light to improve the drought situation, and strong winds over the weekend whipped up dust and loose soil in eastern Colorado and southwestern Kansas. Widespread snowfall west of the Continental Divide was an important feature of the week's weather, as accumulations in the Sierra Nevada and Cascade Mountains were increased by 6 inches to over a foot and those in the Rocky Mountains generally by about 6 inches. East of the Rocky Mountains light snowfall was rather frequent in extreme northern areas and 1 to 4 inches fell over the Ohio Valley and central and northern Appalachians during the first few days of the period. By the end of the period, however, the ground was bare in the Ohio Valley. In mountainous areas of West Virginia, Maryland, and Pennsylvania depths generally ranged from 1 to 6 inches. Snow that covered parts of northern Texas, central Oklahoma, northern Arkansas, and southern Missouri at the beginning of the period had all melted by Thursday evening. (Summary Supplied by U. S. Weather Bureau).

FOREST INSECT SURVEY PROCEDURES IN MAINE

Reported by H. B. Peirson

In 1921 the Maine Forest Service appointed a forest entomologist as a result of tremendous losses of spruce and fir following a spruce budworm outbreak. Work was immediately started in instructing forest fire wardens throughout the State on ways of reporting insect conditions in their districts. In the next three years publications to help wardens and others identify the principal insects and to explain methods of estimating damage were published. The first forest type map of the State was compiled by the fire wardens to be used in forest insect work. Studies on outbreaks starting up made it increasingly clear that these did not spring up simultaneously over wide areas but almost invariably started as small local outbreaks gradually spreading out over wider areas. This fact forcibly brought out the necessity of locating outbreaks in their incipiency when economical control could best be carried out. Forest type maps helped materially in showing the extent to which outbreaks might go if not controlled and also indicated areas of pure stands where outbreaks might start.

In 1929 the office of State entomologist was established. Additional assistance made it possible to spend much more time instructing the fire warden force who were showing real interest in the forest insect program. In 1938 the fire wardens sent in over 450 reports on European spruce sawfly conditions alone. A forest insect laboratory to handle collections from the field was constructed at Augusta in 1939 and a new method of collecting by beating insects from the trees with a pole on to a six by nine foot sheet of unbleached cotton was started. Mailing cans and report blanks were furnished each warden with the sheets. Insects collected in this manner were put in the can and mailed to the laboratory for identification. A total of 761 collections were received in 1944.

In 1945 six part time forest insect rangers were appointed, each having a district of about 2,500,000 acres to cover. These rangers supplemented the insect detection work of the fire wardens by getting into infrequented areas and carrying on the detection work during fire danger periods when the wardens were not available. By 1950 the collections reached over 3000 per year and by 1953 reached slightly over 5000. An effort is made to make collections, or observations, in every township in the State each year. The rangers also help instruct the fire wardens.

Approximately 210 permanent sample plots are examined each year to check on the increase or decrease of specific insects. Special collections by counting the number of larvae on definite length twigs, the number of scales per square foot of bark, or the percentage of crown affected by borers is carried on by the insect rangers to follow definite variations in insect populations. During July and early August twenty-one light traps scattered through the forest area of the State are run to pick up any flight of moths into the State and to check on local build-ups. Most of the State is flown over by the entomology staff to pick up and map in from the air any outbreaks that might have been missed on the ground. This is becoming an increasingly important phase of the work. Planes are also used to take the rangers into the more inaccessable areas saving many days of travel.

Schools for the wardens and rangers are held each year at the beginning of the season. Each fire warden has to make eleven collections during the season as part of his job. Every collection received is acknowledged and the collector notified as to what insects were present in the collection. This has helped materially in keeping up interest. Every two years a school is held for foresters on insect and disease problems and methods of detection, where kodachrome slides and moving pictures help bring out the important phases of the work. At the laboratory detailed records are kept and distribution maps compiled. Many collections are reared so as to study parasitism and feeding habits.

The forest insect detection work is making it possible to locate outbreaks before they become widespread and is gradually making it possible to foretell outbreaks several years in advance. This service, together with quick control action, is making it possible to greatly cut down on the tremendous losses which result from insect outbreaks. The data collected is also valuable in working up information on prevention of outbreaks through better forest management.

SUMMARY OF INSECT CONDITIONS - 1954

ARKANSAS

Reported by L. O. Warren

This summary is for the period of April 1 to December 31. Information for certain portions was obtained from the Arkansas State Plant Board, State Forestry and Parks Commission and State Apiary Board.

Cereal and Forage Insects

The major pest of cereal grain was the ARMYWORM (*Pseudaletia unipuncta*). Infestations were widespread over the State and extensive control measures were required. The eastern third of the state had generally heavy infestations up to 20 to 25 larvae per square foot. The extreme northwestern counties likewise were heavily infested. Central and northern counties had locally heavy and southwestern counties light to non-economic infestations. Control of damaging infestations was accomplished by aerial application of insecticides. An estimated 197,000 acres of grain were treated resulting in a saving of $1,013,750. Insecticidal treatments were timely and effective so that direct losses were held to a minimum. Effective parasite and predator control of armyworm infestations was not observed in 1954. VARIEGATED CUTWORM (*Peridroma margaritosa*) infestations occurred concurrently with armyworm in small grain but in fewer numbers. APHID populations varied from non-existent to heavy in small grain. English grain aphid (*Macrosiphium granarium*) was predominant in numbers followed by corn leaf aphid (*Rhopalosiphum maidis*). Direct damage was light and non-economic. Natural control factors kept aphid infestations in check for the most part.

CHINCH BUG (*Blissus leucopterous*) infestations were light in cereal grain. Economic infestations built up in corn and sorghum in the northeastern counties. Some insecticidal treatments were applied for control. Crops were damaged badly by the drought thus many economic infestations of chinch bugs were not treated because of low crop value. Fall hibernation counts indicate that most of the northeastern counties will be subject to light to heavy infestations in 1955. Alfalfa fields were infested by VARIEGATED CUTWORM early in the season. Infestations ranged from light to severe with heaviest numbers in east central counties. Drought conditions favored a buildup of GARDEN WEBWORM (*Loxostege similalis*) in some areas, particularly in the central and northwestern counties. Infestations of THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) were general in northern half of the State. Locally heavy infestations caused economic damage in some northwestern and northeastern counties. PEA APHID (*Macrosiphum pisi*) infestations did not build up to serious economic levels although widespread over

State. Control measures were needed on a few fields of alfalfa in Crawford County. Infestations of ALFALFA CATERPILLAR (*Colias philodice eurytheme*), TARNISHED PLANT BUG (*Lygus lineolaris* GREEN CLOVERWORM (*Plateypena scabra*) and YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) were common and widespread but damage was not important. Infestations of the CLOVER LEAF WEEVIL (*Hypera punctata*) caused some damage to alfalfa in northwestern Arkansas, especially in Benton and Boone Counties. Severe drought conditions of 1954 lessened effect of corn borer infestations and likely retarded movement to uninfested areas. The EUROPEAN CORN BORER (*Pyrausta nubilalis*) appeared in Lee and Boone Counties for the first time, making a total of 10 counties in the State known to be infested. SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) is present in 23 counties, six including Boone, Searcy, Van Buren, Faulkner, White and Garland, for the first time. Early season infestations were heavy in the upper Arkansas River Valley and the northwestern counties. Numbers were low over the newly-infested area. This pest is now threatening to move into the Delta corn-growing area. FALL ARMYWORM (*Laphygma frugiperda*) caused severe widespread damage to late corn. Damage was done as a budworm, as a borer, and as an earworm. Sorghum plantings were likewise infested but damage was much less severe. Much of the early-planted corn escaped severe damage by CORN EARWORM (*Heliothis armigera*) due to natural control. Natural control was not effective for infestations in mid and late summer and damage varied from light to heavy in most areas. A WEBWORM (*Crambus* sp.) severely injured corn following a meadow crop in Carroll County.

RICE WATER WEEVIL (*Lissorhoptrus simplex*) infestations in rice were usually light and damage not significant, heaviest in Monroe County. RICE STINK BUG (*Solubea pugnax*) infestations were general over the rice growing area. Locally heavy in Lonoke and northern Jefferson Counties with losses up to 15 bushels per acre resulting from stink bug activities. Recently-flooded rice in Prairie County was attacked by a WEBWORM (*Nomophila noctuella*). Leaf feeding did not result in economic damage. BEAN LEAF BEETLE (*Cerotoma trifurcata*) severely damaged soybeans in the northeastern counties. Elsewhere, damage was light to insignificant. Overwintered adults attacking seedlings caused loss of stand in some fields of northeastern area. Damage to soybeans by CORN EARWORM was locally severe in Jackson and adjacent counties. GREEN CLOVERWORM likewise caused light to moderate damage in this area. GRASSHOPPERS (mostly *Melanoplus* sp.) caused light to severe damage in local areas. The heaviest concentration was in western Pike and northern Howard Counties. Approximately 5,000 acres of pasture land and summer forage crops were severely damaged. Locally heavy infestations were present in the northwestern and north central counties. Natural control of grasshoppers was largely ineffective in 1954.

Truck Crop Pests

Much damage was done to early gardens by CUTWORMS. TOMATO HORNWORM (Protoparce quinquemaculata) appeared early and caused light to moderate damage in northwestern area. Damage by TOMATO FRUITWORM (Heliothis armigera) was as great or greater than in previous years. Infestations of GREEN PEACH APHID (Myzus persicae) were light and caused little damage in the upper Arkansas River Valley. SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi), STRIPED CUCUMBER BEETLE (Acalymma vittata) and MELON APHID (Aphis gossypii) caused light to moderate damage to cucurbits in the melon-growing areas. Late pea or bean crops were subjected to heavy attack by CORN EARWORM, particularly in the northwestern counties. Injury by LESSER CORNSTALK BORER (Elasmopalpus lignosellus) to peas and beans was very local. VEGETABLE WEEVIL (Listroderes costirostris obliquus) damaged tomatoes in scattered local areas.

Fruit Insects

The extreme dry season of 1954 did not favor a buildup of many of the fruit insects. PLUM CURCULIO (Conotrachelus nenuphar)infestations were generally low and losses were light other than cost of control. ORIENTAL FRUIT MOTH (Grapholitha molesta) activity was likewise low and losses local. Control practices were effective when properly applied. PEACH TREE BORER (Sanninoidea exitiosa) infestations were general and most producers applied control. Spider mite (Tetranychus sp.) infestations on peaches were heavy in some orchards of Crowley's Ridge area but economic losses were not general. In some apple orchards infestations were locally severe and premature defoliation occurred. CODLING MOTH (Carpocapsa pomonella) numbers light in northwestern counties. Grasshoppers (Melanoplus sp.) caused partial to nearly complete defoliation of apple trees in many orchards, thus exposing the fruit to sunscald. STRAWBERRY WEEVIL (Anthonomus signatus) infestations were about normal. Some fields in White County area lost as high as 25 percent of buds due to weevil activity. In the northwest and north central counties, damage ranged from light to moderate. Control necessary. Activity of the STRAWBERRY CROWN BORER (Tyloderma fragariae) was low in the State except in the Van Buren-Searcy County area where the pest appeared in damaging numbers for the first time. STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) was of little concern in 1954. The greatest damage to strawberry harvest in 1954 was caused by the CORN EARWORM (Heliothis armigera). Larvae were present in the fruit at the beginning of harvest but actual infestations were very low, averaging no more than 7 or 8 larvae per 24 qt. crate. Processors restricted purchases of fresh fruit and in many cases stopped altogether. Limited observations indicated that contamination of fresh pack would have been very light or none at all. Harvesting and marketing of berries was disrupted at a considerable financial loss to the farmers.

Cotton Insects

BOLL WEEVIL (Anthonomus grandis) losses were relatively light, due in part to high temperatures and dry weather through most of the summer. Irrigated fields had generally heavy infestations. Insecticidal treatments were required on a tight schedule to reduce damage in the irrigated cotton. Late summer showers in some areas caused an upsurge of activity which resulted in boll damage. BOLLWORMS (Heliothis armigera and H. virescens) appeared early and in heavy numbers. Natural control held most infestations in check until mid-July. Following the breakdown of natural control, considerable damage occurred over the entire cotton growing area. Control measures were required. The ratio of H. armigera to H. virescens was shown to be about 93 to 7 in cotton. A more detailed report on bollworms has previously been given (CEIR 4(44): 971). COTTON APHID (Aphis gossypii) infestations were generally light with damaging infestations appearing locally in Lonoke County. Spider mites (Tetranychus sp.) appeared very early on seedling cotton in the central counties. Infestations built up in Conway, Lonoke and Jefferson Counties and control was necessary. COTTON FLEAHOPPER (Psallus seriatus) found generally over the State but injurious infestations occurred in only local areas, particularly in St. Francis, Mississippi, and Jackson Counties. TARNISHED PLANT BUG (Lygus lineolaris) caused concern to growers in the southeastern counties but its importance as a cotton pest in Arkansas has not been determined. PINK BOLLWORM (Pectinophora gossypiella) was recovered from gin trash in three counties outside the 1954 quarantine area. This area was extended to cover 28 counties for the 1954-55 season.

The cotton insect scouting program carried out under the supervision of the Arkansas Extension Service expanded sharply during the year. A total of 44 scouts were employed in 19 of the cotton producing counties. Approximately 65,000 acres were scouted regularly each week. Data gathered on the use of insecticides for cotton insect control show that 30,000,000 pounds of dust equivalent were used in Arkansas during 1954. Value of the insecticides was approximately $3,000,000, and cost of application $1,200,000, making a total cost of insecticidal application for cotton insect control $4,200,000. The estimated value of that portion of the crop saved through insect control particularly from bollworm damage, was $50,000,000.

Stored Grain Insects

The sharp shift from commercial to on-the-farm storage of grain has caused a great increase in stored grain insect problems in Arkansas. A fall survey of 50 bins in 4 counties--Logan, Cross, Arkansas and Jefferson -- showed that 86 percent of the bins were infested with one or more species of grain insects. The SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) was predominant in numbers and bins infested. Other species were the lesser grain borer (*Rhyzopertha dominica*), confused flour beetle (*Tribolium confusum*), flat grain beetle (*Laemopholoeus pusillus*), Angoumois grain moth (*Sitotroga cerealella*), rice weevil (*Sitophilus oryza*) and the cadelle (*Tenebroides maritanicus*). The hot dry weather of summer and early fall did not favor a buildup of the rice weevil or Angoumois moth. Late fall and early winter observations indicated an increase of these grain pests. Grain now in storage may be subject to serious attack as warm weather progresses. Considerable financial expense has already been incurred by the farmers for grain fumigation.

Forest and Ornamental Insects

Pure stands of young pine suffered light to heavy damage by the NANTUCKET PINE MOTH (*Rhyacionia frustrana*) in south Arkansas. A SPIDER MITE (*Paratetranychus milleri*) caused some flagging of pine in the Ashley-Ouachita County area. Infestations of a LOBLOLLY PINE SAWFLY (*Neodiprion* sp.) have almost disappeared. Active infestations were found in very local areas in Ashley, Bradley and Calhoun Counties. BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) damaged pine in several counties. Numerous sites of 1 to 10 trees were infested in the southern half of the State. BARK BEETLES (*Ips* sp.) were active in the pine forests of the Coastal Plain and Ouachita Mountain area. Periodic scouting and vigorous salvage operations by the timber companies prevented bark beetles from flaring up in epidemic numbers. Of the 19,364,000 acres of forest lands in Arkansas, 7,500,000 acres are predominantly loblolly and shortleaf pine. An estimated 27,750,000 board feet of timber valued at $832,500.00 was lost due to bark beetle activity in the pine forests during 1954. No estimate of losses to hardwoods was obtainable. An OAK LECANIUM (*Kermes pubescens*) occurred in the greatest numbers ever noted in the State. Light to moderate flagging of the terminals was noted in many counties of the northern half. The most severe damage was observed in Faulkner County.

Man and Animals Insects

Mosquito and fly control programs were conducted as county projects in 13 counties in the delta areas of the State at a total cost of nearly $60,000 and mosquito control programs in 24 towns in the State at a total cost of approximately $60,000. During the year 13 cases of malaria were reported to the State Board of Health as follows: Camp Chaffee 6, Benton County 1 (a Korean veteran), Clark County 1 (a Korean veteran), Craighead County 2, Poinsett County 2, and Desha County 1. Those from the latter 3 counties were Mexicans, imported for cotton picking. Drought conditions of the past year had a noticeable effect on tabanid populations which were low throughout the season. HORN FLY (*Siphona irritans*) infestations were spotty, even on untreated herds. Locally heavy infestations were sometimes observed after rain showers. Lice infestations were about normal for this area. The numbers of ticks have decreased steadily during successive dry years and this year reached the lowest level of infestation observed in recent years. COMMON CATTLE GRUB (*Hypoderma lineatum*) infestations were about normal.

Household Pests

Cockroaches, particularly the BROWN-BANDED ROACH (*Supella supellectilium*) continue to be a problem in homes and restaurants. The roach has replaced others as the major household species. Termites and powder post beetles caused extensive damage with the cost of control for these pests alone amounting to $840,000.00. Approximately 20 percent of the damage was caused by powder post beetles.

Bees

During the year, 18,771 colonies of bees were inspected by the State Apiary Board. Of these, 330 were infected with American foul brood and 17 with European foul brood. Value of the colonies lost is placed at $8,675.00.

* * * * * * * * * * * * * * * * *

Summary of Beet Leafhopper Conditions in Southern Idaho and Eastern Oregon - 1954

Reported by J. R. Douglas

Beet-leafhopper populations and the acreage of Russian-thistle in the fall of 1953 were the lowest since 1946. The low leafhopper population was a result of spraying in 1953 approximately 11,000 acres of the most productive spring breeding areas in southern Idaho, of the unsuitability of spring weed host in other areas, and of the low acreage of Russian-thistle on which this insect reproduces during the summer. Winter annuals germinated soon after the summer weed hosts dried, and this insect entered the winter of 1953-54 under favorable conditions. The warm, dry winter was very favorable for leafhopper survival. The spring weed-host plants were generally abundant and widely distributed in most of the burned and disturbed areas, while in the sagebrush areas they were generally dwarfed and sparse. The spring weed-host patches in western Idaho-eastern Oregon were more abundant than in several years, while in Magic Valley, they were less abundant. Spring studies of representative breeding areas in 1954 showed an average of 63 overwintered beet leafhoppers per 100 square feet of weed-host area, as compared with an average of 30 for the past 13 years. The spring weed hosts in southwestern Idaho were unfavorable for producing a maximum leafhopper population, since many plants died prematurely, except in patches within and adjoining the cultivated areas and in a few desert breeding areas. The warm, dry weather in April and May hastened the early maturity of the spring generation of this leafhopper and the drying of weed hosts. One of the most productive desert spring breeding areas had a population of 188 nymphs per square foot of weed host on May 17. There was approximately a 70-percent stand of pure weed hosts over about 5,000 acres. These weed hosts died before the insects reached the winged stage and by May 24 it was difficult to find any leafhoppers in the area. The initial movement of spring-generation leafhoppers into beetfields began on May 21 and reached a peak on June 9 when 78 adults per 100 square-foot samples were recorded, as compared with 730 for the 20-year period of 1935-54. Tests of spring-generation leafhoppers collected in spring breeding areas and beetfields showed that 33 and 63 percent carried the virus of curly top. Readings of curly-top infection in commercial beanfields of southcentral Idaho showed that an average of 2 percent of the snap beans and .5 percent of Great Northern U. I. 123 dry field beans was infected with curly top. An average of 13 percent of the sugar-beet plants in southcentral Idaho and western Idaho-eastern Oregon were infected with curly top. The fall population of beet leafhoppers in 1954 was five times larger than in 1953 but only a fourth as large as the 1949 fall population. The acreage of Russian-thistle was the second largest since 1949. Since winter annual hosts germinated soon after the summer host plants dried, this insect entered the winter under favorable conditions.

USDA, AGRL RESEARCH SERVICE
ENTOMOLOGY RESEARCH BR.
FRUIT INSECT INVESTIGATIONS
7-23-54 PLANT INDUSTRY STATION
IPS BELTSVILLE, MD.